UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/062,873	01/31/2002	Jung-Hyun Kim	8021-86 (SS-15408-US)	2204

7590 10/22/2003	EXAMINER
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ART UNIT	PAPER NUMBER
2182	

DATE MAILED: 10/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application N . 10/062,873	Applicant(s) KIM, JUNG-HYUN
	Examiner Alan S Chen	Art Unit 2182

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-5_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _6-14_ is/are allowed.

6)☒ Claim(s) _1 and 3-5_ is/are rejected.

7)☒ Claim(s) _2_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _31 January 2002_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _3_ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other:

DETAILED ACTION

Claim Objections

1.   Claim 1 is objected to because of the following informalities: the word "is" in line 23 of

page 25 should be deleted. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on
> sale in this country, more than one year prior to the date of application for patent in the United States.

3.   Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by No. 5,961,614 to

Christiansen.

4.   In reference to claim 1, Christiansen discloses a communication system (Fig. 1 and 4)

which stores packet data received via a plurality of channels (Fig. 1, element 20) in a memory

(Fig. 1, element 90) or transmits packet data stored in a memory through the plurality of

communication channels, the communication system comprising: a plurality of buffer descriptors

in which information on packet data received or transmitted via the plurality of communication

channels is stored (Column 1, lines 24-32); a CPU which stores the information on packet data in

each of the plurality of buffer descriptors (Column 1, lines 40-52), and allots a flag bit (Fig. 7

and 8) to each buffer descriptor indicating whether an error occurred in packet data received via

the plurality of communication channels, or whether the processing of each of the buffer

descriptors is completed (Fig. 7 and 9); and a DMA controller which determines the flag bit

allotted by the CPU, and according to the flag bit, stops processing a buffer descriptor currently

being accessed and accesses the next buffer descriptor, or processes packet data according to

information stored in buffer descriptor currently being accessed (Column 4, lines 1-12).

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

6.   Claims 3-5 are rejected under 35 USC 103(a) as being unpatentable over Christiansen in

view of applicants admitted prior art.

Christiansen discloses the communication system of claim 1.

Christiansen does not disclose expressly a NBDP allotted by the CPU to each of the buffer

descriptors and the DMA controller accessing the NBD based on an identification of the NBDP

allotted to the buffer descriptor currently being accessed. Christiansen also does not disclose

expressly processing of the buffer descriptor sequentially by adding to the start pointer the size

of the previous buffer descriptor, in essence, having a address counter.

The admitted prior art by the applicant (Fig. 1 and 2) discloses the above-mentioned

function of the NBDP (Fig. 1) as well as the sequential processing of the buffer descriptors (Fig.

2).

Christiansen and the applicant's prior art analogous art because they are from the same

field of endeavor in implementing DMA controllers and processing of the associated buffer

descriptors.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to include the NBDP and sequential processing of buffer descriptors.

The suggestion/motivation for doing so would have been to allow the next buffer descriptor to be stored elsewhere that is not immediately adjacent to the buffer descriptor currently being processed as well as processing buffer descriptors that are adjacent to each other. A plethora of current memory access methods allow for both contiguous and noncontiguous memory processing.

Therefore, it would have been obvious to combine Christiansen with the prior art admitted by the applicant for the benefit of buffer descriptors processed with contiguous and noncontiguous memory.

Allowable Subject Matter

7.   Claims 6-14 are allowed.

In reference to claims 6-11, the following is the statement of reasons for the indication of allowable subject matter: The prior art disclosed by the applicant and cited by the Examiner fail to teach or suggest, alone or in combination, a communication method comprising the steps of determining whether the DMA controller is accessible after the organization of the buffer descriptor is completed and skipping the buffer descriptor currently being accessed if it is determined that an error occurred.

In reference to claims 12-14, the following is the statement of reasons for the indication of allowable subject matter: The prior art disclosed by the applicant and cited by the Examiner fail to teach or suggest, alone or in combination, a buffer descriptor comprising a skip bit for indicating whether the CPU is organizing the buffer descriptor. Prior art shows buffer descriptor

comprising an ownership bit, status bit, data pointer, and command bit (see Fig. 1 of applicant drawings and Fig.7 and 9 of Christiansen) and handling the case when the buffer descriptor has completed processing or an error has occurred.

8.   Claim 2 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is the statement of reasons for the indication of allowable subject matter: The prior art disclosed by the applicant and cited by the Examiner fail to teach or suggest, alone or in combination, a communication system comprising a skip bit for indicating whether the CPU is organizing the buffer descriptor. Prior art shows buffer descriptor comprising an ownership bit, status bit, data pointer, and command bit (see Fig. 1 of applicant drawings and Fig.7 and 9 of Christiansen) and handling the case when the buffer descriptor has completed processing or an error has occurred.

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to:

U.S. Pat. No. 5,379,381 to Lamb

U.S. Pat. No. 5,513,320 to Young et al.

U.S. Pat. No. 5,696,989 to Miura et al.

U.S. Pat. No. 5,805,816 to Picazo, Jr. et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan S Chen whose telephone number is 703-605-0708. The examiner can normally be reached on M-F 8:30am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey A Gaffin can be reached on 703-308-3301. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

ASC
10/8/03

JEFFREY GAFFIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100